**Cancer Epidemiology Services**
**Public Health Services Branch**
**New Jersey Department of Health and Senior Services**

## Probability of Developing Cancer for Selected Age Groups by Sex, 2001-2003 (New Jersey and U.S.)

### Technical Notes

The following table presents probabilities (risk estimates) of developing invasive cancers from birth to death (all ages) and for the age intervals 0-39, 40-59 and 60-79 for New Jersey and the U.S. These probabilities are based on cancers diagnosed from 2001-2003. The cancer risk estimates are presented for men and women separately for all sites combined and for fourteen common cancer subtypes. The data represent all races combined with the exception of melanoma of the skin which is presented for whites only. In addition, *in situ* cancers are not included except for bladder cancer *in situ* cases, which are included with invasive urinary bladder and all sites.

The probabilities of developing invasive cancers for selected age intervals were calculated using DevCan Software[1]. DevCan calculates the probability of developing or dying of cancer using both incidence and mortality data[2].

New Jersey cancer incidence data for first primary cancers only were taken from the November 2005 analytic file of the New Jersey State Cancer Registry. New Jersey cancer mortality data were obtained through the SEER Program website. With the exception of the two additional criteria used for this analysis (year of diagnosis 2001-2003 and first primary cancers only), the data specifications for New Jersey incidence and mortality data used for this analysis were the same as the specifications in our recent report *Cancer Incidence and Mortality in New Jersey, 1999-2003*[3]. The New Jersey incidence and mortality data for 2001-2003 were imported into DevCan to create a New Jersey DevCan database for calculating the probabilities of developing cancer.

The U.S. DevCan database was downloaded directly from National Cancer Institute (NCI) Surveillance, Epidemiology, and End Results (SEER) Program[4].

### How to Read the Table

The probability of developing invasive cancer from birth to death, also know as lifetime risk, among New Jersey residents is about 60% for men and 49% for women, both of which round off to 1 in 2. The probability of developing invasive colorectal cancer between the ages 40-59, among New Jersey residents is 1.02% for men and 0.80% for women, which round off to 1 in 98 men and 1 in 125 women.

These probabilities reflect the average experience of people in New Jersey and do not take into account individual behaviors and risk factors. For example, the estimate of 1 man in 13 developing lung cancer in a lifetime underestimates the risk of smokers and overestimates the risk for nonsmokers[5].

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## Probability of Developing Invasive Cancers for Selected Age Groups by Sex, 2001-2003 (New Jersey and U.S.)*

| | Sex | New Jersey All Ages** % | 1 in | 0-39 % | 1 in | 40-59 % | 1 in | 60-79 % | 1 in | U.S. All Ages** % | 1 in | 0-39 % | 1 in | 40-59 % | 1 in | 60-79 % | 1 in |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All Sites *** | Male | 60.04 | 2 | 1.68 | 60 | 10.40 | 10 | 46.26 | 2 | 45.51 | 2 | 1.42 | 71 | 8.50 | 12 | 34.30 | 3 |
| | Female | 48.55 | 2 | 2.39 | 42 | 11.02 | 9 | 29.40 | 3 | 38.01 | 3 | 2.02 | 49 | 8.98 | 11 | 22.29 | 4 |
| Oral Cavity and Pharynx | Male | 1.29 | 77 | 0.04 | 2,458 | 0.42 | 239 | 0.76 | 132 | 1.38 | 73 | 0.04 | 2,390 | 0.41 | 241 | 0.83 | 120 |
| | Female | 0.63 | 160 | 0.03 | 3,001 | 0.14 | 725 | 0.35 | 288 | 0.67 | 149 | 0.03 | 3,006 | 0.15 | 686 | 0.36 | 280 |
| Colon and Rectum | Male | 6.68 | 15 | 0.08 | 1,274 | 1.02 | 98 | 4.46 | 22 | 5.75 | 17 | 0.08 | 1,339 | 0.91 | 111 | 3.82 | 26 |
| | Female | 6.29 | 16 | 0.09 | 1,169 | 0.80 | 125 | 3.43 | 29 | 5.42 | 18 | 0.07 | 1,522 | 0.70 | 142 | 2.92 | 34 |
| Lung and Bronchus | Male | 8.08 | 12 | 0.03 | 2,944 | 1.13 | 89 | 5.99 | 17 | 7.62 | 13 | 0.03 | 3,293 | 0.97 | 103 | 5.69 | 18 |
| | Female | 6.48 | 15 | 0.05 | 2,031 | 0.98 | 102 | 4.34 | 23 | 5.82 | 17 | 0.03 | 3,216 | 0.78 | 128 | 3.96 | 25 |
| Melanoma of the Skin (White) | Male | 2.54 | 39 | 0.15 | 667 | 0.64 | 156 | 1.52 | 66 | 2.33 | 43 | 0.15 | 663 | 0.61 | 165 | 1.34 | 75 |
| | Female | 1.74 | 58 | 0.27 | 374 | 0.49 | 204 | 0.79 | 127 | 1.63 | 61 | 0.27 | 365 | 0.51 | 198 | 0.68 | 148 |
| Breast | Female | 13.04 | 8 | 0.56 | 180 | 4.24 | 24 | 7.06 | 14 | 12.82 | 8 | 0.48 | 209 | 3.96 | 25 | 7.16 | 14 |
| Cervix Uteri | Female | 0.81 | 124 | 0.16 | 623 | 0.33 | 304 | 0.28 | 359 | 0.72 | 140 | 0.15 | 665 | 0.28 | 364 | 0.25 | 402 |
| Corpus and Uterus, NOS | Female | 2.99 | 33 | 0.05 | 1,942 | 0.83 | 121 | 1.88 | 53 | 2.59 | 39 | 0.06 | 1,598 | 0.72 | 138 | 1.54 | 65 |
| Ovary | Female | 1.58 | 63 | 0.08 | 1,265 | 0.44 | 230 | 0.82 | 122 | 1.47 | 68 | 0.08 | 1,296 | 0.37 | 269 | 0.79 | 127 |
| Prostate | Male | 19.99 | 5 | 0.02 | 6,649 | 3.19 | 31 | 16.64 | 6 | 17.70 | 6 | 0.01 | 10,287 | 2.65 | 38 | 14.54 | 7 |
| Urinary Bladder *** | Male | 4.31 | 23 | 0.03 | 3,732 | 0.53 | 190 | 2.91 | 34 | 3.62 | 28 | 0.02 | 4,397 | 0.39 | 256 | 2.42 | 41 |
| | Female | 1.44 | 70 | 0.02 | 6,558 | 0.18 | 558 | 0.82 | 122 | 1.14 | 88 | 0.01 | 10,297 | 0.12 | 822 | 0.65 | 155 |
| Brain and Other Nervous System | Male | 0.71 | 142 | 0.14 | 734 | 0.18 | 555 | 0.37 | 270 | 0.66 | 153 | 0.12 | 822 | 0.16 | 639 | 0.35 | 290 |
| | Female | 0.56 | 179 | 0.12 | 861 | 0.12 | 806 | 0.26 | 384 | 0.52 | 193 | 0.11 | 900 | 0.11 | 918 | 0.24 | 420 |
| Thyroid | Male | 0.44 | 228 | 0.08 | 1,257 | 0.16 | 629 | 0.21 | 478 | 0.37 | 268 | 0.06 | 1,597 | 0.13 | 752 | 0.18 | 550 |
| | Female | 1.31 | 77 | 0.37 | 267 | 0.52 | 193 | 0.41 | 246 | 1.04 | 96 | 0.30 | 339 | 0.40 | 247 | 0.32 | 310 |
| Non-Hodgkin Lymphoma | Male | 2.38 | 42 | 0.16 | 641 | 0.50 | 202 | 1.38 | 72 | 2.23 | 45 | 0.14 | 736 | 0.46 | 218 | 1.34 | 75 |
| | Female | 1.97 | 51 | 0.10 | 1,002 | 0.36 | 275 | 1.09 | 92 | 1.88 | 53 | 0.09 | 1,138 | 0.32 | 311 | 1.04 | 97 |
| Leukemia | Male | 1.55 | 65 | 0.17 | 595 | 0.25 | 397 | 0.89 | 112 | 1.54 | 65 | 0.16 | 646 | 0.22 | 452 | 0.88 | 113 |
| | Female | 1.08 | 93 | 0.12 | 819 | 0.16 | 636 | 0.52 | 193 | 1.08 | 93 | 0.12 | 834 | 0.14 | 701 | 0.50 | 198 |

* For those free of cancer at beginning of age interval. Based on New Jersey and U.S. invasive cancer cases diagnosed during 2001-2003. Includes all races except melanoma of skin includes whites only.

** All Ages represents birth to death.

*** All Sites exclude basal and squamous cell skin cancers and *in situ* cancers except urinary bladder.

Probabilities of developing cancer were calculated using DevCan (Probability of Developing Cancer Software) developed by National Cancer Institute (NCI).

Data sources: New Jersey incidence data - New Jersey State Cancer Registry, New Jersey Department of Health & Senior Services 2005; New Jersey mortality data and U.S. incidence and mortality data, - Surveillance, Epidemiology, and End Results (SEER) Program, NCI; underlying mortality data - National Center for Health Statistics

# References

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